

CHAIN SAW CARRYING CASE

BACKGROUND OF THE INVENTION

1. Field of the Invention

5 The present invention relates to carrying cases for chain saws and the associated product packaging.

2. Background Art

Chain saws are typically packaged for sale at the retail level in cardboard boxes provided with point of sale graphics on the exterior surfaces thereof. Cardboard boxes can become quite bulky, particularly when the saws are
10 shipped in their fully assembled state. In order to minimize shipping and packaging costs, chain saws in the past have been shipped in the two-part box as shown in Figures 1 and 2, having an enlarged rectangular box-like section surrounding the chain saw motor housing in a relatively small box portion affixed thereto enclosing the chain saw bar. When boxes of this type are placed in a shipping container,
15 boxes are nested in pairs as illustrated by the second box shown in phantom outline in Figure 1, however, there is still a fair amount of empty space in the shipping container resulting in unnecessary shipping costs.

An objective of the present invention is to improve space utilization in a shipping container of chain saws, particularly, chain saws which are shipped in
20 a substantially fully assembled condition.

SUMMARY OF THE INVENTION

Accordingly, a carrying case is provided for a chain saw which includes a motor housing enclosure portion and an elongate bar cover. The motor housing enclosure is sized to receive the motor housing portion of a chain saw with

the chain saw bar extending through an opening in the front wall of the motor housing enclosure. An elongate bar cover is attached to the motor housing enclosure front wall and has a tubular cavity sized to receive the chain saw bar. The front wall of the motor housing enclosure is further provided with an elongate slot oriented on the opposite side of the central axis as the elongate bar cover and sized to receive an elongate bar cover of another similarly constructed carrying case. This construction enables two chain saws while in their carrying cases to be nested together with the elongate bar cover of each projecting into the motor housing enclosure of the other, thereby minimizing cargo space when a plurality of chain saws and their associated carrying cases are shipped together.

Another embodiment of the invention includes a chain saw mounted in a carrying case which in turn is at least partially enclosed within protective packaging. The carrying case includes a motor housing enclosure sized to receive the motor housing portion of the chainsaw and an elongate bar cover out on the front wall of the motor housing enclosure defining a tubular cavity communicating with the interior cavity of the motor housing enclosure and sized to receive the bar portion of a chain saw positioned therein. The carrying case with the chain saw placed therein is enclosed within product packaging which encircles the motor housing enclosure to seal the carrying case closed while providing point of sale graphics. Preferably, the carrying case is provided with a handle which is accessible through the product packaging so that the purchaser may carry the chain saw within the carrying case of the product packaging suitcase-style from the point of sale.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 is a top plan view of a prior art carrying case with an adjacent similarly constructed carrying case shown in phantom outline;

FIGURE 2 is perspective view of the prior art carrying case of Figure 1;

FIGURE 3 is a top plan view of a chain saw carrying case of the present invention corresponding to the Figure 1 view of the prior art;

FIGURE 4 is a perspective view of the chain saw carrying case within its product packaging corresponding to the Figure 2 view of the prior art;

5 FIGURE 5 is a perspective view of a carrying case for a chain saw with an alternative wrap-type product packaging shown in phantom outline;

FIGURE 6 is a cross-sectional top plan view taken along line 6-6 in Figure 5;

10 FIGURE 7 is a longitudinal end view of the carrying case taken in the direction arrow 7 in Figure 5;

FIGURE 8 is a perspective view of an alternative embodiment of the chain saw carrying case of the of the present invention;

FIGURE 9 is a chain saw carrying case of Figure 8 shown in the open configuration; and

15 FIGURES 9a and 9b are enlarged detailed drawings illustrating how the elongate bar cover of adjacent similarly constructed gearing casing fits into the slot formed in the motor housing enclosure.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT(S)

20 A chain saw and carrying case assembly 8 shown with its point of purchase product packaging is illustrated in Figure 3, nested together with a similar chain saw 8', as the two products would be oriented during bulk shipping. Prior art carrying case shown in Figures 1 and 2 resulted in wasted empty space within the shipping container although the two-part box design results in a significant space
25 savings vs a single large rectangular box. Two chain saws when nested together as

shown in top plan view in Figure 1 have a width of X which is the sum of the width of the box surrounding the motor housing assembly portion of the chain saw and the width of the smaller box surrounding the saw bar. The chain saw carrying case 10 and the associated product packaging of the present invention enables the saw bar cover 12 to fit within the product packaging 14 surrounding the motor housing portion of the chain saw having a width of X' for a pair of nested carrying cases. This results in about 20% more chain saws to fit within a given size shipping container. Since chain saws are relatively light compared to their volume, the shipping containers are not load limited, therefore, adding additional chain saws to a shipping container directly reduces one's average shipping costs when shipping full containers.

The present invention is utilized to ship a chain saws in a substantially completely assembled state. Preferably, the chain saw is sold with a reusable plastic carrying case 18 which, in turn, is placed within product packaging, which prevents the carrying case from being opened and provides a point of sale graphics. Alternatively, the carrying case may be a disposable cardboard box or the like which provides a carrying case at the time of purchase, but is not intended to be repeatedly reused or used in harsh environmental conditions.

Preferably, the carrying case as illustrated in Figure 5, includes a plastic motor housing enclosure 20 sized to receive the housing portion 18 of the chain saw. The motor housing enclosure 20 has an interior cavity 22 as shown in Figure 6 and a front wall 24 aligned generally normal to a center line 26. Elongate saw bar cover 12 is mounted to front wall 24 of the motor housing enclosure 20 and is offset to one side of central axis 26 as shown. The elongate saw bar cover 12, which is also preferably made of molded plastic provides a tubular interior cavity which communicates with the interior cavity 22 of the motor housing enclosure 20 sized to receive the bar portion 16 of a chain saw placed in a carrying case.

Front wall 24 of the motor housing enclosure is further provided with an elongate slot 26 oriented on the other side central axis 26 as the elongate bar cover 12. Slot 26 is sized to receive the elongate bar cover of another similarly

constructed carrying case enabling two chain saws, while in their carrying cases to be nested together with the elongate bar cover of each projecting at least partially into the motor housing enclosure of the other. As illustrated in Figure 6 top cross-sectional plan view, there is space within the motor housing enclosure 20 between the outer wall of the carrying case and the chain saw motor housing 18 to receive an elongate bar cover adjacent a saw blade as indicated in phantom outline.

In the preferred embodiment illustrated, slot 26 is closed by a hinged flap door mounted to the plastic front wall 24 of the motor housing enclosure 20. Alternatively, an adhesive patch may be provided with the carrying case of the motor housing enclosure so that a purchaser of the chain saw may seal the opening to prevent entry of dirt and debris into the carrying case.

Preferably, the motor housing enclosure 20 is made of a two-piece hinged design including a base portion 30 and a hinged cover 32, retained in the closed position by a latch 34. A handle 36 is provided on the top surface of the motor housing enclosure in a generally above center of gravity 38 of the chain saw and carrying case assembly. The motor housing enclosure 20 and the elongate bar cover 12 are preferably blow-molded or injection molded using a suitable plastic material.

In the preferred embodiment illustrated in Figure 4, a product package 14 surrounds the motor housing enclosure 20 and is provided with point of sale graphics as illustrated. In the Figure 4, product package 14 is a generally rectangular cardboard or paperboard box. Preferably, product package 14 is provided with a slot 40 in the upper surface thereof adjacent handle 36 in the motor housing enclosure so that the user may grasp handle 36 through the slot 40 in the protected package 14 and carry the chain saw and carrying case from the point of sale briefcase style.

Alternatively, product packaging may be provided by a wrap-type product package 42 which surrounds the motor housing enclosure 20 and circumscribes central axis 26. The wrap-type package 42 illustrated in phantom

outline in Figure 5 can be paperboard or plastic film wrapped tightly and securely about the motor housing enclosure preventing the motor housing enclosure from being opened prior to purchase. Wrap-type protective package 42 can be wrapped solely about the motor housing enclosure as a band as illustrated in phantom outline or the wrap-type enclosure may extend over the front and back panels provided that slot 26 is freely accessible. In the case of the box-type protective package 14 as illustrated in Figure 4, the front wall of the protective package is provided with a slot 44 aligned with slot 26 in the motor housing enclosure portion of the carrying case.

Figure 8, 9, 9a and 9b illustrate an alternative carrying case embodiment 50 having a multi-panel construction. Carrying case 50 is generally rectangular having six sides which are preferably formed of molded plastic and most preferably, formed of dual wall plastic blow molded panels. Carrying case 50 is provided with a top 52, bottom 54, a front panel 56, a back panel 58, a right side panel 60 and a left side panel 62. Preferably, the front 56, back 58, bottom 54, and right side 60, snap or screw together to form a rigid subassembly as illustrated in Figure 9. Top cover 52 and left side panel 62 are pivotally connected to the subassembly by hinges as illustrated. Hinges are formed in a conventional manner with alternating lugs being formed on adjacent panels with a steel hinge pin projecting through holes formed in the lugs along the hinge axis. The top cover 52 and left side panel 62 are releasably attachable to one another by conventional over center latches 64 and 66. Preferably, each of the top cover and left side panel is provided with adjacently spaced web members 68 and 68' with aligned holes formed therein so that the carrying case can be locked closed using a conventional padlock or the like. The top cover 52 is further provided with a handle 70 pivotally connected to the top cover and orientable in a raised position as illustrated in Figure 8 or in a lower position where it is not recessed in pocket 72 so that the top cover 52 is substantially flat.

Elongate bar cover 74 is shown mounted upon front panel 56 providing a tubular cavity 76 sized to receive the saw bar of a chain saw housed within the carrying case. To facilitate easy installation and removal of the chain saw

within the carrying case, elongate bar cover 74 is oriented within an elongate slot 78 which extends through a substantial portion of the height of the front cover 56 as illustrated. The portion of the slot 78 not occupied by the elongate bar cover 74 is filled by a hinged door 80. In the closed storage position, door 80 is closed and is generally planer with front wall panel 56 as illustrated. In order to remove the chain saw from the carrying case, door 80 can be opened allowing the elongate bar cover to be lifted vertically out of slot 78. Although it is not necessary for the elongate slot to have an open upper end provided it has sufficient length to allow the elongate bar cover to be raised and inclined sufficiently to allow the chain saw to be removed from the carrying case.

The carrying case 50 has a central axis 84. Slot 78 is formed in elongate bar cover 74 which extends therethrough and is offset to the right side of the central axis 84 in front panel 56. Slot 86 in front panel 56 is offset to the left side of central axis 84 as shown. Slot 86 is sized to receive the elongate bar cover of a similarly constructed chain saw carrying case. The inside surface of the front cover is preferably provided with a hinge door 88 shown in Figure 9b. Hinge door 88 only needs to be open during the bulk shipment of a number of chain saw carrying cases in their nested condition. Once a product has been purchased by an individual user, door 88 may be closed to prevent dirt and debris from entering the carrying case enclosure. The rear wall 58 of carrying case 50 is preferably provided with a recess in the wall as illustrated in Figure 9a in order to further minimize the axial length of the carrying case.

Carrying case 50 is designed to accommodate a chain saw provided with a side handle 90 illustrated in Figure 9. The side handle 90 is a tubular metal J or D shaped structure extending outboard from the chain saw away from the saw bar. Slot 86 may be oriented inboard of the outer edge of the side handle 90 to further facilitate compact packaging of nested chain saw carrying cases during bulk shipping. The resulting carrying case is very compact and efficiently uses not only shipping container space, but, efficiently uses the space within the enclosure allowing the consumer to store accessories such as tool bar oil and the like. When the carrying case is made using a blow molded construction technique, tool receding

pockets may be easily formed in the carrying case panels as illustrated in Figure 9 to make an efficient and ergonomically pleasing, lightweight, but robust product.

5 While embodiments of the invention have been illustrated and described, it is not intended that these embodiments illustrate and describe all possible forms of the invention. Rather, the words used in the specification are words of description rather than limitation, and it is understood that various changes may be made without departing from the spirit and scope of the invention.